

REMARKS

Claim Amendments

Claims 194-198, 200-206, 209, and 211-309 are pending. Claims 232, 242, 249, 253, 257-258, 260-271, 273, 285, 291, 295, and 305-306 are amended herein. Support for these amendments can be found throughout the application as filed. No new matter has been added.

Specification

Applicants have amended the Brief Description of the Figures to recite, "Figures 3A-3C contain..." as suggested by the Examiner. Applicants also submit herewith a formal drawing of Figure 1 that legibly shows the names of all T1Rs and does not recite "rate." The specification has been amended to reflect formal Figures 1a-1b. No new matter has been added. Accordingly, Applicants request withdrawal of the objection to the specification.

Election By Original Presentation

The Office Action states that claims 258 and 260-271 are drawn to a non-elected invention and therefore should be amended. Claims 258 and 260-271 have been amended to recite "the method of claim _." As such, Applicants believe these claims fall within the elected invention and should not be restricted.

Claim Objections

Claim 291 has been amended to add the recitation of "is." Claim 295 has been amended to recite that the step of screening is carried out by a high-throughout screening method. Claim 302 has been amended to recite that the functional assay is a GTP γ ³⁵S assay. Claim 305 has been amended to add a hyphen. In view of these amendments, Applicants respectfully request that the claim objections be withdrawn.

Claim Rejections - 35 U.S.C. §112, First Paragraph (Enablement)

Claims 194-198, 200-206, 209, and 211-309 are rejected on scope of enablement grounds. The Office Action states that the genus of T1R1 and T1R3 receptors is excessive because the claims encompass the genus of receptors which hybridize under specific conditions to known receptors. The Office Action also states that due to the quality of Figure 1, the Examiner cannot identify three T1R1 and T1R3 receptors. The Office Action also objects to the use of "derived from" in claim 258. The Office Action concludes that undue experimentation

would be required for the skilled artisan to make and use the claimed invention because Applicants have only provided guidance and working examples of, at most, two T1R1 receptors and two T1R3 (rat and human receptors).

Applicants respectfully disagree and traverse this rejection.

Initially, Applicants note that the Sequence Listing contains all of the sequences from Figure 1. *See e.g.*, SEQ ID NOS: 4-7 and 16-18. Applicants also submit herewith a formal drawing of Figure 1 that depicts the sequence of the human and rat T1R1 receptor and the human and rat T1R3 receptor. Applicants do not believe the submission of this figure is necessary as all of the substantive information is already of record. However, merely to expedite prosecution, this formal figure is being submitted.

Applicants also draw the Examiner's attention to paragraph [0254]. This paragraph provides the accession number and reference citations relating to mouse and rat T1Rs and allelic variants thereof in the public domain, including rat and mouse T1R1 and T1R3. Applicants will provide a copy of these references at the Examiner's request. Accordingly, Applicants submit that the specification and the state of the art disclose the sequences for wild-type (native) T1R1 and T1R3 receptors from human, rat, and mouse.

Applicants also assert that the claims are directed to methods for identifying compounds that potentially modulate T1R1/T1R3 (umami) receptor-associated taste. The specification teaches methods of identifying such potential modulators. *See e.g.*, paragraphs [0197]-[0232]. As such, the specification provides adequate guidance to teach one of skill in the art how to make and use the full scope of the claimed invention.

The Office Action states that the Examiner may withdraw this rejection, if Applicants can demonstrate that the genus of T1R1 and T1R3 receptors were well known at the time of the invention (i.e., more than two known receptors) and that structural similarities were sufficient enough for the artisan to identify members of these genii.

Applicants submit that this showing has been made. As discussed above, the specification and the state of the art disclose T1R1 and T1R3 receptors from human, rat and mouse. Furthermore, the specification teaches methods for identifying compounds that potentially modulate T1R1/T1R3 (umami) receptor associated taste. Accordingly, Applicants respectfully request withdrawal of this rejection.

Claims 253 and 306 stand rejected as allegedly failing to comply with the enablement requirement. In particular, the Office Action states that the specification does not provide any guidance or working examples as to “which hormones and transmitters are modulated by the T1R2/T1R3 receptor complex.”

Applicants respectfully disagree and traverse this rejection.

Initially, Applicants note that claims 253 and 306 have been amended to recite “neurotransmitter.” Applicants submit that neurotransmitter and hormone release are two of a variety of possible parameters that may be used to test compounds that modulate T1R family mediated taste transduction. *See e.g.*, paragraph [0109]. Assays for testing compounds that modulate G protein-coupled receptors (of which the T1R family is a member) and T1R family mediated taste transduction such as neurotransmitter and hormone release are known in the art. *See e.g.*, paragraphs [0110] and [0221]-[0232]; *see also* Sugita, et al. “Genetic Tracing Shows Segregation of Taste Neuronal Circuitries for Bitter and Sweet,” *Science* 309(5735): 781-785, 2005 (abstract provided herein as **Exhibit A**); Ong et al., “Clinical Potential of GABAB Receptor Modulators,” *CNS Drug Rev.*, 11(3): 317-34, 2005 (abstract provided herein as **Exhibit B**); Wang et al. “Activation of Family C G-Protein-Coupled Receptors by the Tripeptide Glutathione,” *J. Biol. Chem.*, 281(13): 8864-70, 2006 (abstract provided herein as **Exhibit C**). In view of the foregoing, Applicants submit that claims 253 and 306 are enabled and respectfully request this rejection be withdrawn.

Claim Rejections - 35 U.S.C. §112, First Paragraph (Written Description)

Claims 194-198, 200-206, 209, and 211-309 are rejected on written description grounds for substantially the same reasons as discussed in the scope of enablement rejection. For the same reasons discussed above, Applicants request withdrawal of this rejection.

Claim Rejections - 35 U.S.C. §112, First Paragraph (New Matter)

Claims 194-198, 200-206, 209, and 211-309 are rejected as allegedly failing to comply with the written description requirement. The Office Action states that the Examiner was unable to find any disclosure of the specified hybridization conditions.

Applicants respectfully disagree and traverse this rejection.

Applicants draw the Examiner's attention to paragraph [0135], for example, which provides support the hybridization conditions. Applicants respectfully request withdrawal of this rejection.

Claim Rejections - 35 U.S.C. §112, Second Paragraph

Claims 258 and 260-271 are rejected over the phrase "the cell." Applicants have amended these claims to recite, "the method of claim _." Accordingly, Applicants respectfully request withdrawal of this rejection.

Claims 273 and 274 are also rejected over the phrase "the cell." Applicants have amended claim 273 to depend from claim 272 as suggested by the Examiner. Applicants, however, traverse the rejection over claim 274 because this claim does not recite, "the cell." Applicants respectfully request clarification on the rejection over claim 274.

Claims 257-309 are rejected over the recitation of "receptor-associated taste." In particular, the Office Action states that it is not understood how the receptor and taste are associated.

Applicants respectfully disagree and traverse this rejection.

As discussed throughout the specification, T1R1/T1R3 receptors are taste receptors that respond to umami taste and therefore are associated with the activity of umami taste. *See e.g.*, paragraph [0002]. Accordingly, Applicants submit the recitation of "receptor-associated taste" is definite and request this rejection be withdrawn.

Provisional Obviousness-Type Double Patenting

The Office Action provisionally rejected claims 194-198, 200-206, 209, and 211-309 under the judicially created doctrine of obviousness-type double patenting over claims 194-229 of co-pending Application No. 10/725,037, claims 194-234 of co-pending Application No. 10/725,103, and claims 194-235 of co-pending Application No. 10/725,472.

Applicants respectfully request this rejection be held in abeyance until this application is in condition for allowance.

CONCLUSION

It is believed that these amendments and remarks should place this application in condition for allowance. A notice to that effect is respectfully solicited. If the Examiner has any questions relating to this response or the application in general he is respectfully requested to contact the undersigned so that prosecution of this application may be expedited.

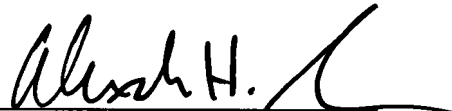
It is believed that no fees are required for entry of this response, but should any fees be necessary, the Commissioner is authorized to charge such fees to the undersigned's **Deposit Account No. 50-0206**.

Respectfully submitted,

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Dated: April 25, 2007

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